Appendix C. Guidelines for Outdoor Recreation Planning

Because each locality has unique resources, conditions, and issues, guidelines for recreational and open space planning must be evaluated in terms of the local situation. Guidelines must be used judiciously as basic norms, subject to modification as local needs arise.

Although it is impossible to settle on just one precise definition for the word "recreation," most would agree that leisure plays a major role in an individual's level of life satisfaction. Whether persons choose to define themselves by the sheer rock face they climb with grace and precision or leave behind the turmoil of daily routine with a contemplative walk in the forest, the physical and psychological benefits of recreation are endless. Herein lies the value of parks and open space to communities.

In order to meet the demand for recreational areas and facilities and provide an outlet for healthy recreational opportunities, there must be a plan. The information that follows is one tool that planners and developers and leisure service professionals can use to gain perspective on the factors that must be considered in the design of recreation areas and facilities and the utilization of open space for recreational opportunities. The guidelines stated here will assist in the development of long-range plans for park and recreational needs and resources, while inviting the reader to consider this important question: how much is enough?

The first step in the planning process is to acknowledge that the resources in each locality are unique, as are the needs of the community. For this reason, it is important to realize that the guidelines presented here are meant to help in the planning process but can be modified to tailor the plan to the resources, issues and needs of the locality.

Planning guidelines and considerations

The 2007 *Virginia Outdoors Plan* addresses several basic categorical areas important to the planning process: area guidelines, space guidelines, capacity guidelines, design guidelines, maintenance guidelines, and playground guidelines. These categories were selected based on the experience and observation of professional planners and park and recreation researchers. They represent reasonable and applicable guidelines for conditions within the Commonwealth. In addition, the concept of sustainable design has recently been developed to recognize the relationship of human civilization to the natural world.

Explanations of the categories mentioned above, along with descriptions of other related terms, are provided herein for users of the *Virginia Outdoors Plan*. It is important to note that many states and professional recreation planners are relying less on standards because they have found so many exceptions to measures used in the past. Every situation is a little different and the user of the following should not consider the information to be the final word on how much of any facility or area a population of any given size should have available. Trends in participation rates can greatly affect demand in any given activity, making standards of questionable value in determining needs.

Quality of the experience

The quality of the visitor's experience is often overlooked in the planning process, but it is an essential factor in the development and design of recreation facilities, areas and open space. The Recreation Opportunity Spectrum (ROS) devised by the United States Department Agriculture Forest Service addresses the concept of user experience and the correlation to recreation planning as follows: "The basic assumption underlying the Recreation Opportunity Spectrum is that options to realize the number of recreational experiences sought by users are best assured by providing a diverse set of recreation opportunities. A recreation opportunity is a chance for a person to engage in a specific recreation activity within a specific environmental setting to realize a predictable recreation experience. Thus, the ROS conceives the recreation management and planning task as a behaviorally-based production process, with three distinct aspects of demand that must be considered."

- "First, visitors seek opportunities to participate in certain activities."
- "Second, visitors seek certain settings in which they can recreate."
- The third aspect of demand is "desired experiences," which is a product of providing the second.

"In offering diverse settings where participants can pursue various activities, the broadest range of experiences can be realized. The task of the recreation planner and manager, then, is to formulate various combinations of activity and set opportunities to facilitate the widest possible achievements of desired experiences – or to preserve options for various types of recreation opportunities." To accomplish this, consider the following points in devising an effective recreation/park plan:

- When possible, go beyond the demand/supply/needs assessment of the locality, and approach the community for input on what opportunities they would like to see developed in their area.
- Think about what kind of experiences you want to provide for users and incorporate that experience into the planning process.
- Conduct a detailed assessment of the natural resources that will be used to put the plan into action, and let the capability/condition of the land dictate the planning goals.

- One consideration that is not addressed by current planning processes is the benefit of large, undeveloped tracts of land being allocated for the "wilderness/primitive experience." As the Virginia's population continues to grow and urban development progresses, it is more important than ever to insure that open space free of parking lots and swimming pools is available for future generations. The benefits of wilderness trails and natural settings, particularly in urban/rural areas, are boundless and should be planned for.

While the goal of the recreationist is to obtain satisfying experiences, the goal of the recreation resource manager becomes one of providing the opportunities for obtaining these experiences. By managing the natural resource setting, and the activities that occur within it, the manager is providing the opportunities for recreation experiences to take place. Therefore, for both the manager and the recreationist, recreation opportunities can be expressed in terms of three principal components: the activities, the setting and the experiences.

For management and conceptual convenience, possible mixes or combinations of activities and settings and probable experience opportunities have been arranged along a spectrum, or continuum. This continuum is called the Recreation Opportunity Spectrum (ROS) and is divided into six classes. The six classes, or portions along the continuum, and the accompanying class names have been have been selected and conventionalized because of their descriptiveness and utility in land and resource management planning and other management applications.

Each class is defined in terms of its combination of activity, setting and experience opportunities. Subclasses may be established to reflect local or regional conditions as long as aggregations can be made back to the six major classes for regional or national summaries. An example of a subclass may be further breakdown of "Roaded Natural" into subclasses based on paved, oiled or dirt surfaced roads, which in turn reflects amount of use, or a further breakdown of "Primitive" based upon aircraft or boat use.

Table A-1 describes the general environmental and societal settings that are outlined in the ROS. When a specific activity and desired experience is matched with the appropriate setting, the environmental planner is then able to design an area that will fulfill the expectation of the user.

The Recreation Opportunity Spectrum provides a framework for stratifying and defining classes of outdoor recreation opportunity environments. As conceived, the spectrum has application to all lands regardless of ownership or jurisdiction. Its use in the national forest system will facilitate the consideration, determination and implementation of the recreation management role.

Table A-1. Recreation Opportunity Spectrum (ROS) Setting Characterization

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of others is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to- large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions are present, but are subtle. Motorized use is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions are present, but are subtle. Motorized use is permitted.	Area is characterized by predominantly natural appearing environments with moderate evidence of the appearances of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventionalized motorized use is provided for in construction standards and facility design.	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for specific activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.	Area is characterized by substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans on-site are predominant. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

Table A-2. Park Area Standards

Class	Acres/1,000	Service Radius: Urban/Suburban	Service Radius: Rural	Minimum Size (Acres)
Neighborhood Park	3	2 Miles	1 – 1½ Miles	5
Playground or Playlot	–	2 Miles	–	–
Community Park	3	1 Mile	3 – 7 Miles	20
District Park	4	5 – 7 Miles	10 – 15 Miles	50
Regional Park	*	25 Miles	25 Miles	100
State Park	10	1 Hour	50 Miles	600

Total Recommended Acres/1,000 Population: 20
** Considered at a variable rate over and above local area standard.*

For more information on the Recreation Opportunity Spectrum (ROS), contact the Forest Service at:

USDA Forest Service
George Washington and Jefferson National Forests
5162 Valleypointe Parkway
Roanoke, VA 24019-3050

Area guidelines

Area guidelines are used to determine the number of acres of recreational and park lands needed by a locality. These guidelines are usually expressed as a minimum number of acres per 1,000 people in the population.

The recommended area guideline for local recreation and park sites in Virginia is 10 acres per 1,000 people, which represents a minimum acreage that should be exceeded when possible. Though this recommendation is sufficient for the inventory and development of parks in rural and less densely populated areas, it is more difficult to meet this standard in an urban setting. Where you have more extensive development, higher population numbers in a small area, and a lack of available and affordable open space, recreational development must be planned to accommodate the needs of as large and diverse a user group as possible. It is important to disperse park opportunities evenly throughout the locality so that each sector has convenient access to parks and open space. The planning and development process should also provide for as many different kinds of activities as the resources will allow.

Another crucial factor that must be incorporated into the demand-supply-needs inventory equation is the existence and accessibility to private facilities such as schools, churches, and clubs. Though these facilities play an important part in accommodating the recreation needs of a community, planners must also note that these facilities are not available to everyone at all times. They are not accessible during normal operating hours, and if a membership is required, the user group is restricted to organization members. If the needs identified by the community are not met by the existing publicly accessible facilities, then local planners must devise options for meeting those needs.

In meeting the 10 acres per 1,000 people area standard, planners should consider three major local park classifications — the neighborhood park, the community park, and the district park. Each of these park categories has its own unique function and service radius within the locality. Frequently, local government will interchange the names of the park types, but their functions within the locality remain unchanged. Table A-2 summarizes area guidelines for each park type.

Space guidelines

Space guidelines deal with actual site planning and give the amount of land or water necessary for a particular activity, e.g., the number of square feet needed for a tennis court or acres needed for a football field. These guidelines are usually constant and not subject to variation.

Capacity and space guidelines are presented in Tables A-3. These guidelines determine the amount of land or water required to accommodate a particular activity within a park complex and determine how many people can be accommodated during an average day, week or season. To reiterate, an assessment of the existing resources should be conducted, the development plan should be shaped to accommodate as many types of opportunities as possible, and the natural layout of the resources or landscape should be utilized in developing appropriate opportunities. The tables show the capacity and space guidelines for the most popular types of outdoor recreational activities in the Commonwealth.

Capacity guidelines

Capacity guidelines relate to the instant, daily or seasonal capacity of a particular recreational facility. They aid in the development of management plans and/or determinations of facility adequacy to meet local needs. When the capacity standard of a particular facility is known, the planner can

then determine (based on local demand) how many facilities are needed. Capacity guidelines are subject to variations depending on the quality of the facility and its management, e.g., a night-lighted ball field has a greater daily capacity than an unlit field. Many localities are constructing rectangular multi-purpose fields that are lighted and have all weather surfaces. These large fields can be used for multiple activities such as soccer, football, lacrosse, field hockey, rugby, and many other activities. The daily capacity of such a field changes depending on how it is configured and which sports are being played.

Two additional facets of carrying capacity that affect the user's experience and the resources themselves are physical and social carrying capacity. Physical carrying capacity relates to the maximum use that a recreation area can sustain without resource degradation. It correlates also to maintenance guidelines discussed further in this section, and it is imperative to the upkeep and preservation of existing resources. It is possible to increase the physical carrying capacity of an area by hardening defined impact areas for each activity.

Social carrying capacity relates to the user's expectation of the type and quality of recreation experience they are hoping to have. This is a very important consideration in the design and development of recreation and open space resources. In order to maximize satisfaction of the user, it is imperative to design the area or facility so as to provide the most appropriate environment for the activity at hand.

Social interaction level is an aspect of social carrying capacity that can be a determinant of the potential for user conflict in a recreation area. An example of user conflict between two substantially different users might be paddlers and personal watercraft (pwc) users; they are both using the same resources, but in very different ways. Their expectations for the experience, the environment in which they choose to participate, and the atmosphere that they create with respect to their level of presence are all factors that might contribute to user conflict.

For further information on the concept of user expectation, refer to the section above on "Quality of the Experience," as well as the U.S.D.A. Forest Service's Recreation Opportunity Spectrum model.

Design guidelines

The guidelines for designing park and open space areas are as varied and diverse as the resources that will support them. Depending on the kind of experience that is intended and the type of user to be served, there are many different sources for park and open space design guidelines. The schematic sketches in the latter part of this chapter will provide a brief overview of the size, service area, administrative responsibilities, purpose, character, location and potential facilities that might exist on various levels from a neighborhood playground or play lot to a state park.

A few key resources for park and open space are provided below:

The Virginia Greenways and Trails Toolbox – Connecting Our Common Wealth

Department of Conservation and Recreation
203 Governor Street, Suite 326
Richmond, VA 23219
(804) 786-6124
www.dcr.virginia.gov

National Recreation and Park Association
22377 Belmont Ridge Road
Ashburn, VA 20148-4501
Phone: 703-858-0784 Fax: 703-858-0794
E-mail: *info@nrpa.org*

USDA Forest Service
George Washington and Jefferson National Forests
5162 Valleypointe Parkway
Roanoke, VA 24019-3050

National Park Service
U. S. Custom House
200 Chestnut Street, Fifth Floor
Philadelphia, PA 19106
(215) 597-7013
www.nps.gov

Trails for the Twenty-First Century: Planning, Design, and Management Manual for Multi-Use Trails (Second Edition)
Charles A. Flink; Kristine Olka; Robert M. Searns

Rails-To-Trails Conservancy
1100 17th Street, 10th Floor, N.W.
Washington, DC 20036
(202) 331-9696
greenways@transact.org

Maintenance guidelines

Maintenance guidelines refer to the desired level of maintenance for recreation facilities and areas within a park system, as well as those activities or individual work elements that support maintenance requirements.

Despite the almost endless variety of tasks and methods associated with the upkeep of any system of outdoor recreational facilities, the National Recreation and Parks Association (NRPA) has established a set of guidelines. *Park Maintenance Guidelines* (1986) was developed from years of research and evaluation. This document covers a multitude of maintenance levels, methods and practices. Due to its length and complexity, there is no attempt to summarize the document within the *Virginia Outdoors Plan*. However, copies may be obtained by writing the National Recreation and Parks Association, 22377 Belmont Ridge Road, Ashburn, VA 20148.

Playground guidelines

Playground guidelines are used to evaluate a playground to identify any features that could lead to an injury to a child. Playground guidelines address issues such as protective surfacing, head entrapment hazards, entanglement hazards and equipment location. These guidelines are designed for persons concerned with public playground safety.

The Consumer Product Safety Commission (CPSC) estimated that more than 70% of injuries on both public and home playground equipment resulted from falls, especially falls to the surface beneath the equipment. Other reasons for injuries included impact from moving equipment (13%), the majority of which involved children under the age of six, running or bumping into stationary equipment (5%), and contact with hazards such as protrusions, pinch points, sharp edges, and hot surfaces (7%). (*Playground Equipment Related Injuries and Deaths*, April 1990, U.S. Consumer Product Safety Commission, Washington, DC 20207)

An average of 15 playground equipment-related deaths are reported each year, according to data from the CPSC, and more than 40% of these involve children under the age of six. Fatal injuries most often involved entanglement in ropes tied to or caught on equipment, falls, impacts from tip-overs or failures of equipment, impact with moving swings, and head entrapment (*Hazard Sketch: Playground Equipment-Related Injuries and Deaths*, October 1996, U.S. Consumer Product Safety Commission, Washington, DC 20207)

In Virginia, more than 400 children under the age of 15 were hospitalized between 1994 and 1997 after falling from playground equipment. Costs associated with these hospitalizations totaled $1,858, 289, or an average of $4600 per hospitalization (Center for Injury and Violence Prevention, Virginia Department of Health).

Sustainable design

Sustainable design is a concept that adds a holistic approach to societal growth. This concept proposes that in order to ensure that the well being of the natural world is not compromised in the face of development, it is important to plan communities in a manner that considers the value of natural heritage resources. From the revitalization of existing facilities in lieu of new development to designing neighborhoods so that open space is preserved, sustainable design recognizes the economic, environmental and social value of Virginia's natural resources. For an in-depth presentation on the concept of sustainable design, see *Better Models for Development in Virginia – Ideas for Creating, Maintaining, and Enhancing Livable Communities* by Edward T. McMahon with Sara S. Hollberg and Shelley Mastran.

In 1991, the National Park Service (NPS) developed guidelines and recommendations for incorporating principles of sustainable design regarding natural resources, cultural resources, site planning and design, architectural design, building ecology, interpretation, energy and utilities, waste disposal, and facilities maintenance and operation.

Urban guidelines

One of the greatest challenges that urban planners and natural resource managers face is how to most effectively utilize available resources within an urban area to meet recreational and open space needs. When you consider the diverse activities that make up the recreation/leisure participation of the citizens in any one area, the task of providing resources to support these activities is daunting. From athletic fields that accommodate youth and adult sports to the undeveloped open space resources that are required for even a semi-wilderness experience, providing an outlet for these activities is no easy job. Maintenance and repair of fields and facilities, staffing constraints and budgetary issues are but a few of the barriers that must be overcome when attempting to accommodate the needs of many with limited resources.

In order to most efficiently utilize the a locality's resources, it is essential to adopt a local comprehensive plan that considers demand placed on existing resources and an assessment of how these resources meet current and projected needs. Since available resources are as varied as the activities they support, the objective of the urban guidelines section of the *Virginia Outdoors Plan* is not to present the reader with a formula for comprehensive planning, but to provide sources for obtaining the information needed to effectively design an urban recreation plan.

The Fairfax County Park Authority has developed a planning process that is an exemplary model on how to effectively meet the recreation needs of a densely populated area. Though the plan is specific to the Northern Virginia metropolitan area, it does address the philosophy, considerations and issues that are associated with any successful comprehensive plan. The plan was developed from results of a demand survey directed to the urban population of Fairfax County. Survey feedback resulted in changed participation and space guidelines and the determination of sustainable carrying capacity guidelines to accommodate developed recreational activities. The planning process also developed criteria for identification and protection of significant and sensitive natural and cultural resources. These guidelines can be applicable to other urban areas in the Commonwealth. Contact the Fairfax County Park Authority, Division of Planning and Development, 12055 Government Center Parkway, Fairfax, Virginia 22035, for further information on the methodology and guidelines.

The following additional resources related to urban planning are provided for readers of the 2007 *Virginia Outdoors Plan*:

American Planning Association
122 S. Michigan Ave., Suite 1600
Chicago, IL 60603
(312) 431-9100 (general)
(312) 786-6344 (Planning Advisory Service and Planners Book Service)
www.planning.org

The following pages contain schematic sketches of various parks and recreational sites and facilities typically found at each.

Neighborhood Playground or Playlot

Size
1/4 acre and larger

Service area
Approximately five minutes walking time

Administrative responsibility
Local government

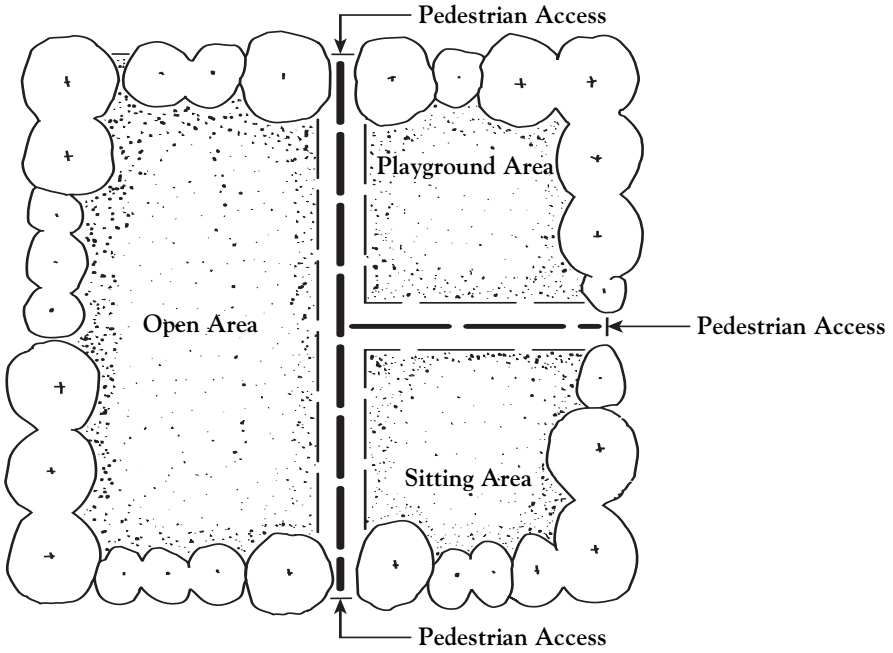
Purpose
The primary function is to provide safe play areas for preschool and school-age children, especially in high-density areas where backyard playgrounds may be unavailable. These parks, however, can sometimes be oriented toward adult needs.

Character
The character is one of intensive use and easy accessibility. Facilities should be designed to meet the needs of local residents. When serving children, these parks should be designed for active play, while those designed for adults should also include opportunities for passive recreation. Maintaining playground equipment is critical and should be considered in the planning stage. These areas are not normally designed for organized activities.

Location
Location is determined more by the availability of land or space than any other factor.

Potential facilities
- playgrounds
- horseshoe courts
- shuffleboard courts
- basketball courts
- volleyball courts
- badminton courts

Figure A-1. Neighborhood Playground or Playlot



Neighborhood Park

Size
5-20 acres
Plan at 3 acres/1,000 population

Service area
Approximately 5-15 minutes walking distance or under one mile driving distance

Administrative responsibility
Local government

Purpose
The primary function is to provide limited types of recreation for the entire family within easy walking distance. Facilities should be provided for all age groups.

Character
Intensive use and easy access are characteristics of this classification. Ideally, the site should have level-to-gently rolling areas to accommodate intensive use facilities, with shaded areas for passive recreation.

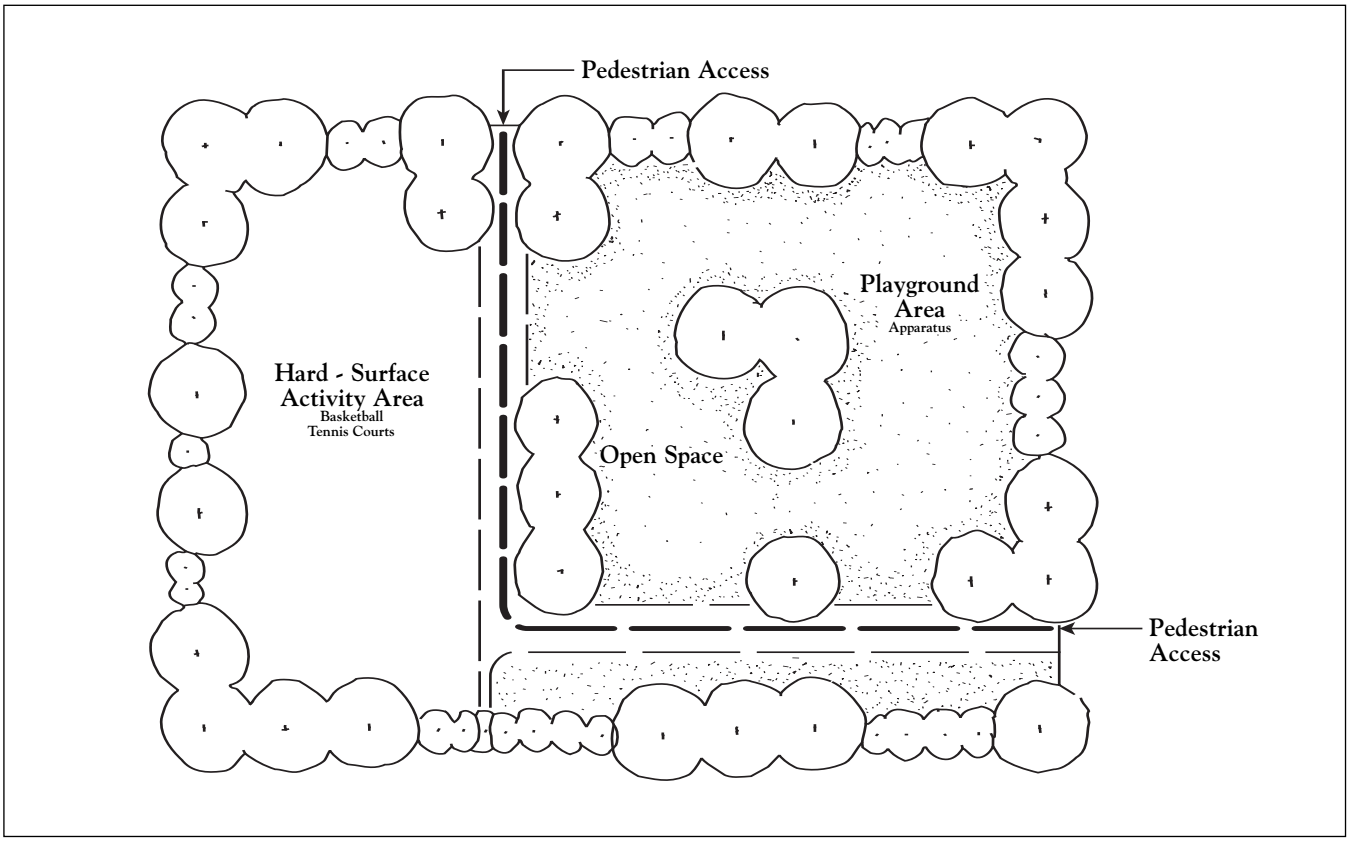
Location
If possible, the neighborhood park should be located near a school and/or the neighborhood center and away from railroads, major streets and other hazardous areas.

Potential facilities
- playground
- picnic facilities
- tennis courts
- ball diamond
- horseshoe courts
- shuffleboard courts
- basketball courts
- football/soccer fields
- volleyball courts
- badminton courts
- walking trails
- fishing pond
- swimming pool
- bikeway
- recreation center

Playfields are usually dual purpose in this type of facility. They are areas for sports and running games and also serve as open space. Intensive use areas (the playground area and hard surface courts) are buffered from other activities by passive natural areas and pedestrian access corridors. Programmed activities, such as organized athletics, are often suitable in neighborhood parks. Although limited parking is provided, site design should encourage pedestrian access to the greatest extent possible.

Rural communities may want to consider including neighborhood park functions in larger community parks, which could better serve the needs of a widely dispersed local population. From an economic standpoint, it would be more beneficial for a rural locality to have a few strategically located, well-designed, larger facilities than to invest in several small sites and not have the funds to properly develop and maintain them.

Figure A-2. Neighborhood Park



Community Park

Size
20-50 acres
Plan at 3-acres/1,000 population

Service area
Approximately 15 minutes driving time

Administrative responsibility
Local government

Purpose
Community parks should primarily support active recreational activities and be capable of withstanding intensive use while still containing a fair amount of open space.

Character
The site usually varies from relatively flat open space to moderately sloping wooded areas. Such a park should be adaptable to a wide variety of recreational activities. Access is gained by auto, bicycles or walking.

Location
When possible, the community park should be located near the center of community with good access and service by a public transportation system.

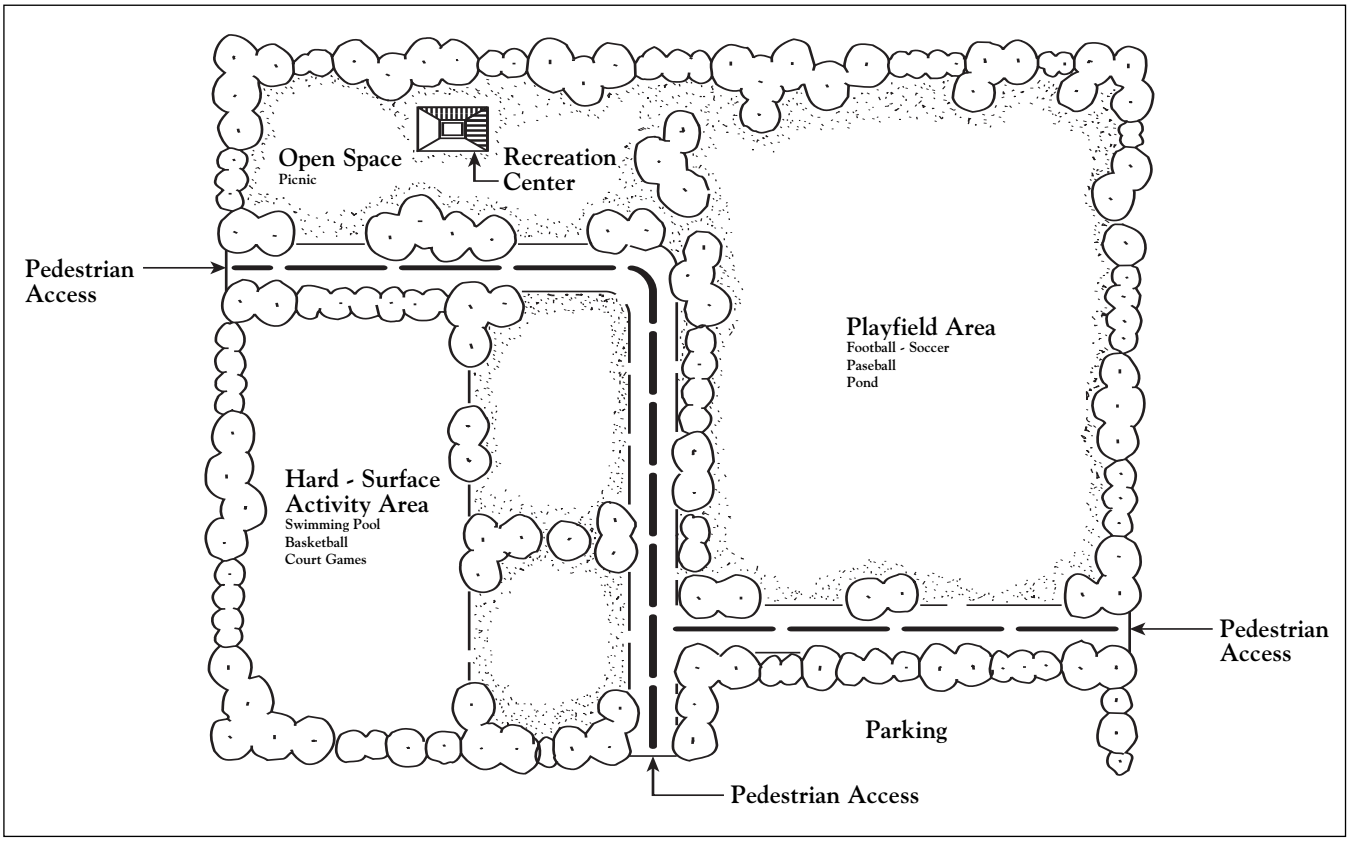
Potential facilities

- playgrounds
- picnic facilities
- tennis courts
- ball diamonds
- horseshoe courts
- shuffleboard courts
- basketball courts
- volleyball courts
- football/soccer fields
- trails: walking, hiking, biking, fitness
- natural area
- fishing lake or stream access
- beach and swimming area
- swimming pool
- parking area
- recreation center

A multitude of activities must be provided by this intensive-use recreational facility. The recreation center is often the focal point of the park. Organized activities and supervised play are administered from this point. Other activities are grouped in the surrounding area. Their location depends on the natural terrain, need for control and vehicular access. Any existing natural qualities — topography, water features, trees, etc. — should be preserved as natural buffers between activity areas, as well as to protect the recreational environment from surrounding, incompatible influences. These natural elements also should be used to provide a space for more passive forms of recreation such as nature walks, picnicking and fishing.

In a rural setting, this park category may take the place of the neighborhood park. It can better serve a widely dispersed population than two or three smaller sites. Community parks, along with neighborhood parks (where applicable), usually meet most of the close-to-home recreational needs of most localities.

Figure A-3. Community Park



District Park (City or County)

Size
50-150 acres
Plan at 4-acres/1,000 population

Service area
15-25 minutes driving time
5-15 mile service radius

Administrative responsibility
Local government

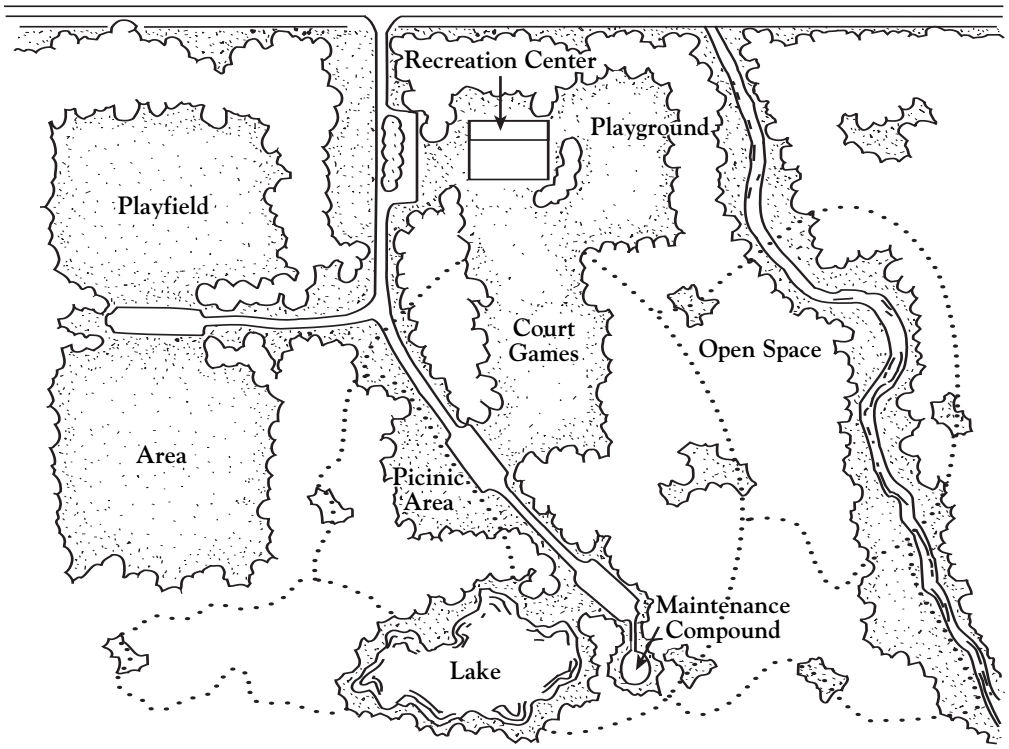
Purpose
The district park should serve the recreational needs of large portions of the local population. It should contain a wide variety of intensively developed areas for day-use recreation, while providing ample open space with generous buffers between activity areas.

Character
The site can vary from flat open space to moderately or steeply sloping topography. It should be capable of supporting a wide variety of activities with ample buffer and natural areas. A stream, lake or tidal waterfront site is very desirable. The district park needs to be accessible by automobile, as well as by pedestrians and bicyclists.

Location
When possible, the district park should be located near the center of the service area. It should be on or near a major street that provides good access to the facility. In urban or suburban situations, easy access to mass transit is highly desirable. The site also should be accessible by pedestrians and bicyclists.

Potential facilities
- playgrounds
- picnic facilities
- tennis courts
- ball diamonds
- horseshoe courts
- volleyball courts
- basketball courts
- recreation centers
- golf
- trails
- natural area
- lake or stream
- fishing/boating
- swimming pool and/or beach with a swimming area
- football/soccer fields
- parking areas
- shuffleboard courts

Figure A-4. District Park



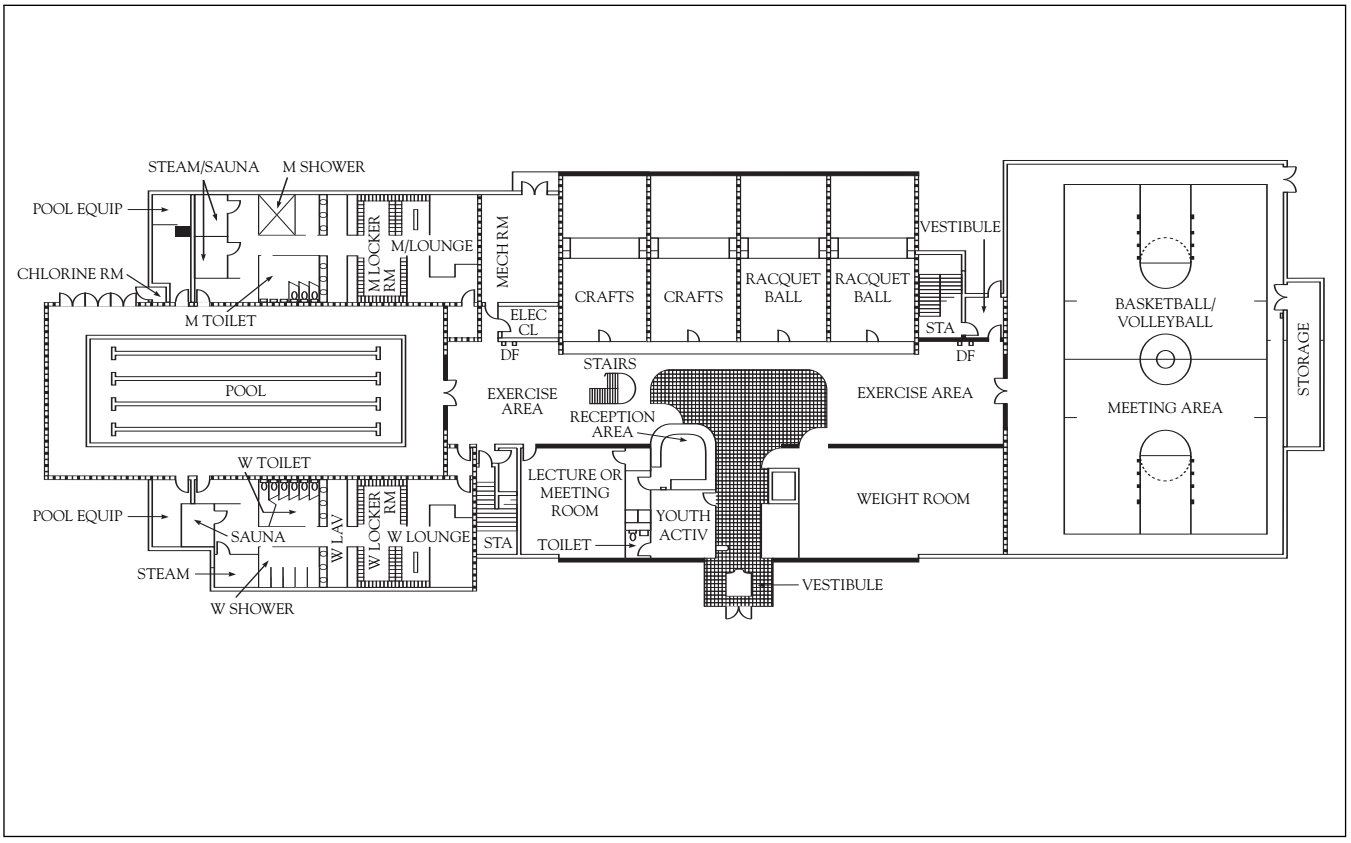
Recreation Center

The recreation center may be found at neighborhood, community, district and large urban parks. At neighborhood parks, the center is usually 15,000 to 20,000 square feet. It generally will include multi-purpose rooms, arts and crafts area, game room, kitchen, lounge and lobby, restrooms, and office. If a gymnasium is not available in a neighborhood school, the recreation center also may include a gymnasium and locker room facilities.

The recreation center in a larger park serving a community, district or city will be considerably larger, from 20,000 to 80,000 square feet, and will include several multi-purpose rooms, gymnasium, child care facilities, aerobics room, racquetball courts, shower and locker rooms, game room, arts and craft area, auditorium or areas for performing arts, classrooms, concession stand, kitchen, large meeting room, restrooms, office, lounge or lobby, and some specialized areas such as a ceramics workshop or weight room. Frequently, larger centers have an indoor pool used year-round for recreational, instructional and therapeutic purposes. An important consideration in all recreational facilities is adequate storage space for equipment and supplies.

Most localities that have developed guidelines for indoor facilities have adopted a standard of 0.5 to 0.75 square feet per resident. Small centers may serve 5,000-8,000 neighborhood residents, while larger centers may well serve communities of 50,00080,000 people.

Figure A-5. Recreation Center



Regional Park

Size
100-500 acres
No special size/1,000 population

Service area
Approximately 45 minutes driving time
25-mile service radius

Administrative Responsibility
Single or multijurisdiction

Purpose
Regional parks should supplement the community park system with more extensive open space areas and readily accessible passive recreational opportunities.

Character
Varied terrain, scenic views and extensive natural areas are important qualities of regional parks, along with the opportunity for participation in a variety of recreational activities.

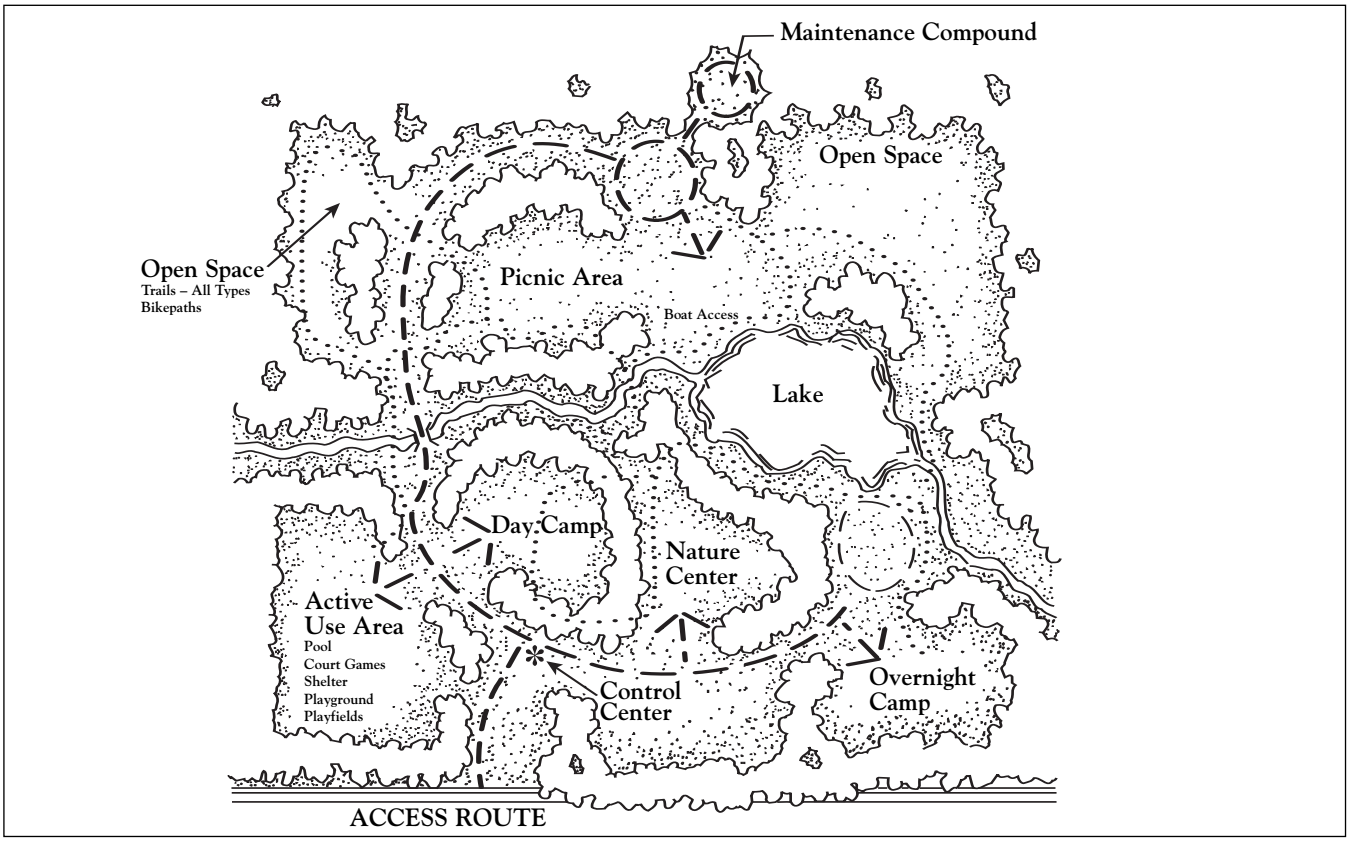
Location
The regional park should be located in areas with significant natural characteristics and should serve several communities.

Potential facilities
- day camping
- overnight camping
- natural area
- picnic facilities
- trails (all types)
- playground
- amphitheatre
- athletic fields
- swimming area, (beach and/or pool)
- boating facilities
- golf
- fishing lake

The regional park is designed to provide recreational space for a relatively large population. The road system enables smooth vehicular flow to the various facilities, and a single main access facilitates control and reduces conflicts between use areas. Located conveniently to the circulation system are large, intensive-use areas and picnic grounds. Lakes, streams or other outstanding natural features are desirable assets. As much as 80 percent of the site is undeveloped usable open space to provide opportunities for hiking, nature study and other passive activities. An isolated segment of the site may be reserved for day camps.

The regional park should complement the facilities provided at other parks and is not a substitute for neighborhood, community or district facilities. In addition to the more intensively developed areas, the regional park should also offer an abundance of open space for recreational pursuits such as picnicking, hiking, nature study and enjoying the outdoors.

Figure A-6. Regional Park



Greenway

Size
Any length, preferably longer than one mile
Typically 75-100 feet or wider

Service area
Depends upon the location, size and significance of the corridor

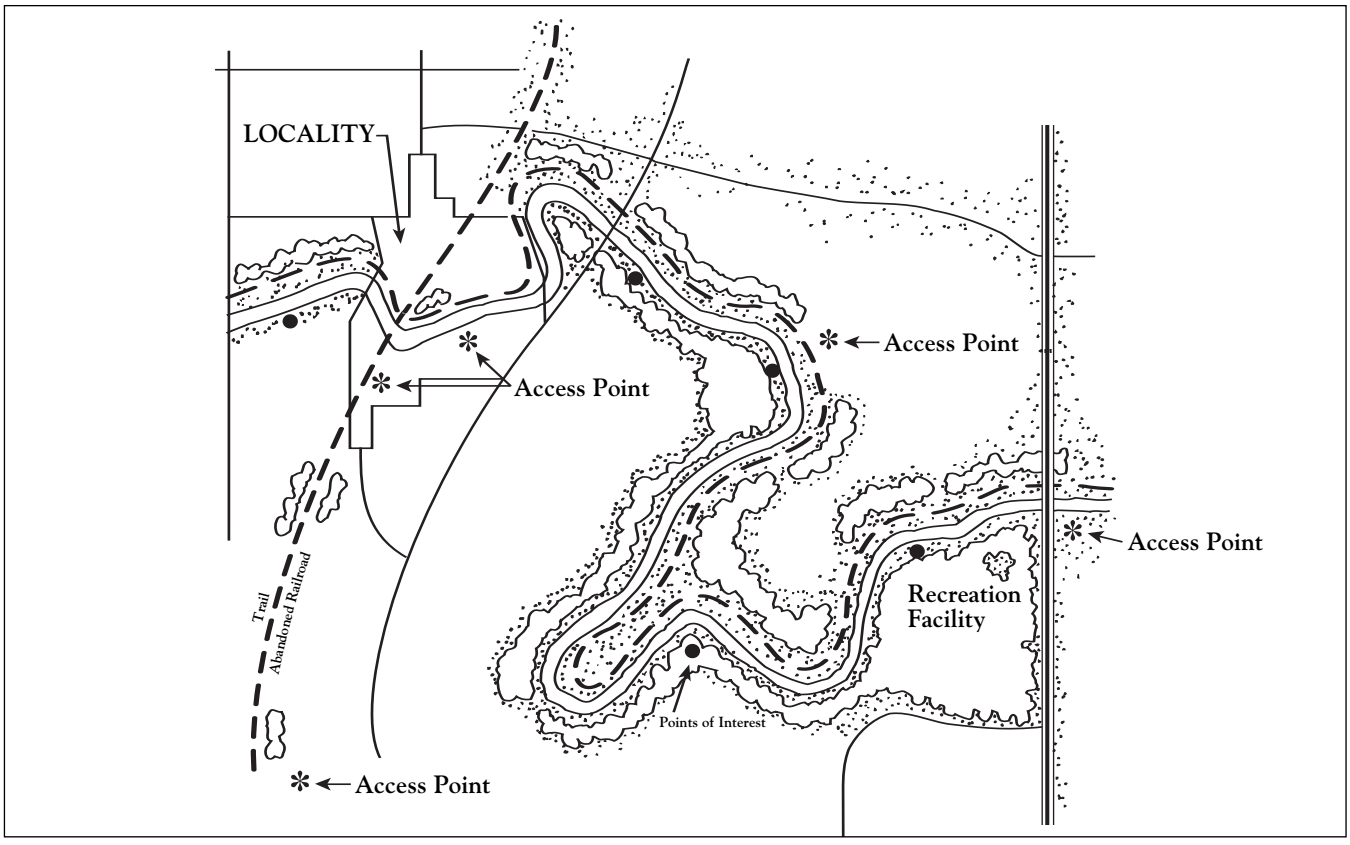
Administrative responsibility
Federal, state, local or public/private partnership

Purpose
Greenways are established to protect, preserve, and maintain existing natural and cultural corridors; to link population centers with recreational, educational and business areas, and other population centers; and to provide recreational and non-motorized transportation opportunities along these corridors by using natural features (ridgelines, steep slopes), utility rights-of-way, abandoned railroad rights-of-way, and watercourses (streams, rivers, canals).

Character
Depending on the location, it can range from rugged terrain with scenic views and extensive vegetation to open level meadows. The greenway can be a separate entity or a portion of any of the other park categories.

Potential facilities
- camping
- picnic facilities
- trails (all types)
- natural area
- winter sports
- fishing
- access points
- canoeing
- parking areas
- boating and facilities
- historic sites

Figure A-7. Greenway



State Park

Size
600+ acres
Plan at 10-acres/1,000 population

Service area
Entire state

Administrative responsibility
Virginia Department of Conservation and Recreation

Purpose
To provide significant recreational experiences and protect a significant natural resource base or landscape

Character
Extensive open space and/or unique natural features in the form of views, terrain and vegetation are important qualities of the state facility. Compatible recreational uses are a necessity. Access to the ocean, the Chesapeake Bay, major lake, or river is very desirable.

Location

- The location is usually determined by the presence of unique natural features and proximity to population centers.
- The site should meet a variety of the popular outdoor recreational activities identified in the *Virginia Outdoors Plan*.
- The site must be consistent with the mission, goals and objectives of the Department of Conservation and Recreation (DCR).
- The site should preferably be located on a significant water resource offering opportunities for water-based recreation.
- A single access road allows excellent control and monitoring of users to the park and serves as the backbone of the vehicular circulation system. Specialized activities are grouped in intensive-use nodes along the central circulation system to provide areas for camping, picnicking, and water-oriented activities. The remaining area – as much as 80 percent of the total site – can be left as natural, undeveloped, but usable open space for such activities as hiking, horseback riding, nature study and fishing.

Potential facilities

- camping
- picnic facilities
- natural area
- swimming pool and/or swimming area and beach
- trails
- open play fields
- overnight facilities
- natural/historic interpretive facilities
- boating facilities
- fishing lake and/or stream access
- playground
- canoeing
- parking areas
- amphitheatre

Figure A-8. State Park

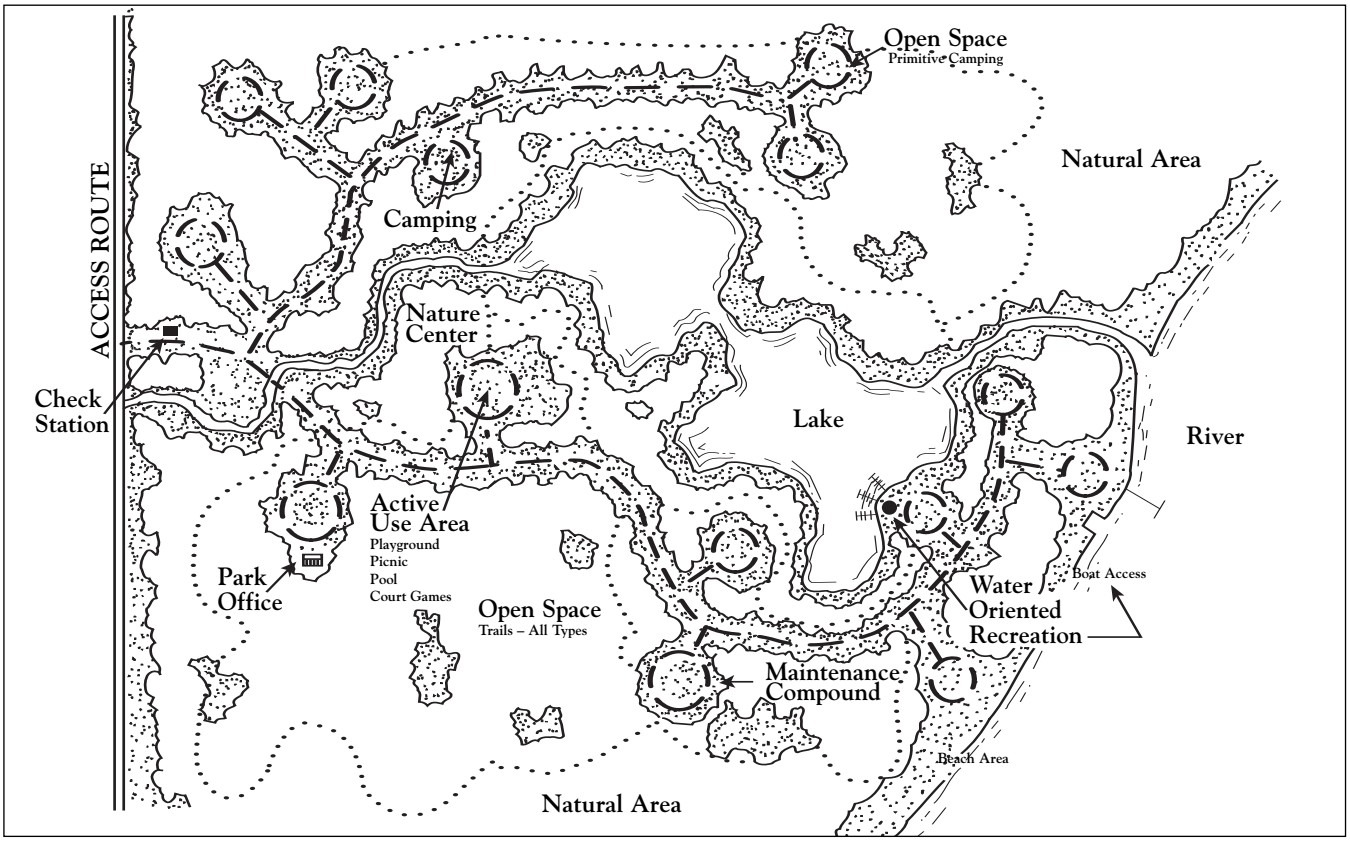


Table A-3. Capacity and Space Guidelines

Activity and Type of Facility	Dimensions**	Net acres* Required	Instant Capacity	Units/ Pop.	Remarks
Archery (Range)	10' x 300' min. per target	.85	10	1/50,000	Ten positions — with movable targets. Could be per part of a range complex including rifle, pistol, skeet and trap-buffer area equired.
Baseball (Diamond)					
Adult	350' x 350' (400' to CF)	3.0	18	1/6,000	Should be included in complex of fields at community district or regional parks — lighting desirable. Check League Guidelines for actual size.
Little League	200' x 200' (250' to CF)	1.5			
Basketball (Court)	60' x 100'	0.15	10	1/5,000	Full court — 1/2 court games would double instant capacity. Should be included in complex of fields at neighorhood, community district or regional parks — lighting desirable — also use as multipurpose court.
Beach (Swimming & Bathing)	Minimum 200' x 600'	3.0 acre	150	25' shore/1,000	Consider at any facility where there is a water body that can support beaches. Swimming unit should contain 100' wide beach with 100' of available swimming water — 30% of people will be in water at one time under normal conditions — support facilities should be shared with other activities.
Boating, (Power) & **Water Skiing**	Variable to meet conditions	12 ac/boat	3.0/boat	0.5 ac/1,000	Minimum of 100 acres of open water at least 4' in depth desirable — would accommodate eight boats at one time.
Boat Ramp	16' x length to meet 3" depth at low water	2 acres	8 boats/hr	see remarks	Provide one ramp for each 40 boats anticipated to use the facility on a design day. (12-14% slope)
Camping	35' x45'	0.125/acre	8 units/ac	10 ac/1,000	Consider this density primarily as a destination-type facility — support facilities would be needed to integrate tent camping with self-contained units — two types should be separate when practical — consider at large regional and state facility.
Self-Contained Unit					
Tent	90' x100'	0.20 ac/site	5 units/ac	5ac/1,000	This is a low density and should be developed when resource is fragile — consider at regional and state facilities.
Canoeing	Variable	***	8 people/		**Small streams 10 to 40 feet wide, 4 canoes/mile mile— medium stream 40' to 70' wide will support 8 canoes/mile — large streams 75' wide or over will support 12 canoes/mile. Width x 5,280' ÷ 43,560 sq ft = surface acres/mile.
Trails					
Multi-use	minimum 12' width				Connector trails should be used to connect schools, parks, and other facilities. Proper signage and education is needed to minimize user conflicts. Provide off-road bicycle trails where practical to connect schools, businesses, parks.
Bicycle	minimum 10' width				
Equestrian	Minimum 4' tread 8' cleared width				
Hiking/jogging	minimum 4' tread - rural minimum 5' tread - urban				Connector trails should be used to connect facilities.

Table A-3. Capacity and Space Guidelines– *continued*

Activity and Type of Facility	Dimensions**	Net acres* Required	Instant Capacity	Units/ Pop.	Remarks
Firearms (Shooting Range)	Variable	5 ac	20	1/50,000	Ten positions on each range. If possible, develop range complex with rifles, pistol ranges, and skeet and trap fields. — Careful coordination with National Rifle Association and local gun clubs desirable. Provide adequate buffer from other activities.
Fishing					
Bank	8' x 50'	400 sq. ft.	100 mile	1 mile shore/	Consider on any water body that can support fish population — DGIF suggests 10-acre minimum size where unlimited fishing pressure anticipated. Fishing water is a plus for any community, district, regional or state facility.
Shoreline	1,000				
Boat		4 ac water/boat with 2 people	.50/acre	4 acre/1,000	
Stream	1 mile/four fisherman	4/mile			
Football (Field)	195' x 480' 150' x 360' actual play area	2.25	22	1/10,000	Should be included in complex of fields at community, district or regional park. Lighting desirable — could also serve as field hockey, lacrosse, or soccer field.
Golf	6,500 yards/18 holes average, 7,000 yds. + championship course.	50 acre/9 holes	4/hole x # holes	9 holes/25,000	Eighteen holes for each 50,000 people minimum size 100 acres — 160 acres desirable — can accommodate 500 persons/day.
Hockey					
Field	200' x 350'	1.6	22	1/25,000	Should be included in complex of fields at community park. Lighting desirable. Are considered multipupose fields. Artificial icemaking required — can adapt paved court areas to hold water in colder parts of state for limited winter use.
Ice Rink	85' x 200'	0.4	12	1/30,000	
Horseshoes (Lanes)	12' x 50'	0.4	4	1/10,000	Include in neighborhood, community, district, or regional park with high percentage of people over 30 —multiple lane best.
Hunting					
Upland		12 acre/hunter/day	.083 hunters/ac		Using a turnover factor of two = 6 acres of resources/hunter.
Waterfowl		12 ac/hunter	.083 hunters/ac		
Lacrosse (Field)	260' x 500'	3.0	20	1/25,000	Football or soccer fields often used — provided at community park.

Table A-3. Capacity and Space Guidelines– *continued*

Activity and Type of Facility	Dimensions**	Net acres* Required	Instant Capacity	Units/ Pop.	Remarks
ORV					
2 Wheel	min. 5' tread width	10 acre min.	4/mile	1 acre/5,000	Carefully planned trails are required to buffer from passive activities. Should be environmentally sensitive.
4 Wheel	min. 7' tread width	15 acre min.	4/mile	2 acre/5,000	
Picnicking	Variable		4/table	10 units/1,00	Tie with other activities — Density higher in urbanized areas.
Sailing	Variable	6 acre/boat	.5 person/acre	1 acre/1,000	Large expanses of open water desirable.
Skateboard Park	Variable	0.25 min.	100	1/25,000	Smooth, level surface required – free from gravels – Concreter preferred; ramp/component materials can vary – steel requires least maintenance; park should be designed to accommodate a variety of vehicles (skateboards, roller blades, bicycles, etc.).
Skiing (Snow)	100' x length		75/lift	1 ac. ski slope/	Requires northeast facing slopes. On site of 1,000 100 acres or more, slopes should be protected by trees. Also requires annual snowfall of 30" or more, or artificial snow-making equipment.
Soccer (Field)	250' x 400'	2.25	22	1/5,000	Provide at community, district, or regional park — football or lacrosse fields often used. Spring and fall seasons may require additional fields if football or baseball fields also used for soccer program.
Softball (Field)	300' x 300'	2.10	20	1/3,000	Provide in complex area neighborhood, community, district, or regional park. Lighting desirable — more than one field per site desirable.
Swimming (Pool)					
Jr. Olympic	45' x 75'	0.5	225	1/10,000	15 sq. ft. of water per person, based on 3% of of population, 100 sq. ft. deck per 35 sq. ft. of water.
Olympic	75' x 150'	0.75	750	1/20,000	
Tennis (Court)	60' x 120'	0.2	4	1/2,000	Provided at neighborhood, community, district, or regional sites — develop in pairs where possible — lighting desirable.
Volleyball	50' x 80'	0.1	12	1/1,000	Provide at neighborhood, community, district, or regional facilities. Consider using basketball courts for multipurpose use.